DEPAREF

Docket No.: 713-1000

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of	:	
Marco SANWALD	:	Confirmation No.2313
U.S. Patent Application No. 10/752,099	:	Group Art Unit: 1734
Filed: January 7, 2004	:	Examiner:

For: PUMPING DEVICE FOR POWDER, A METHOD THEREFORE AND A POWDER COATING DEVICE

REQUEST FOR REFUND

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

A refund in the amount of 636.00 is requested for the following reason:

- A preliminary amendment deleting the multiple dependent claims and additional claims. A copy of the amendment filed June 1, 2004 is attached.

Please immediately credit Deposit Account No.: 07-1337 in this amount.

Respectfully submitted,

LOWE HAUPTMAN & BERNER, LLP

Benjamin J. Hauptman
Registration No. 29,310

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DATE: May 24, 2006

JUN 0 1 2004

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APPLICATION NUMBER	FILING OR 371 (c) DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NUMBER
10/752,099	01/07/2004	Marco Sanwald	713-1000

CONFIRMATION NO. 2313

33712
LOWE, HAUPTMAN, GILMAN & BERNER, LLP (ITW)
1700 DIAGONAL ROAD
SUITE 300
ALEXANDRIA, VA 22314

RECEIVED
APR 15 2004
Lowe, Hauptman, Gilman & Berner

FORMALITIES LETTER

OC0000000012332016

Date Mailed: 04/12/2004

NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION

/02/2004 SDENBOB1 00000113 10752099

FILED UNDER 37 CFR 1.53(b)

FC:1001 770.00 OP
FC:1051 130.00 OP
FC:1202 108.00 OP
FC:1201 86.00 OP

Filing Date Granted

Items Required To Avoid Abandonment:

An application number and filing date have been accorded to this application. The item(s) indicated below, however, are missing. Applicant is given **TWO MONTHS** from the date of this Notice within which to file all required items and pay any fees required below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

- The statutory basic filing fee is missing.
  Applicant must submit $ 770 to complete the basic filing fee for a non-small entity. If appropriate, applicant may make a written assertion of entitlement to small entity status and pay the small entity filing fee (37 CFR 1.27).
- The oath or declaration is missing.
  A properly signed oath or declaration in compliance with 37 CFR 1.63, identifying the application by the above Application Number and Filing Date, is required.
- To avoid abandonment, a late filing fee or oath or declaration surcharge as set forth in 37 CFR 1.16(e) of $130 for a non-small entity, must be submitted with the missing items identified in this letter.

The applicant needs to satisfy supplemental fees problems indicated below.

The required item(s) identified below must be timely submitted to avoid abandonment:

- Additional claim fees of $722 as a non-small entity, including any required multiple dependent claim fee, are required. Applicant must submit the additional claim fees or cancel the additional claims for which fees are due.

SUMMARY OF FEES DUE:

Total additional fee(s) required for this application is $1622 for a Large Entity

Adjustment date: 10/03/2006 SDIRETA1
04/07/2006 BHABTEW 00000009 071337 10752099
02 FC:1203 $130 Late oath or declaration Surcharge.

Adjustment Date: 10/03/2006 SDIRETA1
04/07/2006 BHABTEW 00000009 071337 10752099
02 FC:1203 290.00 CR

Adjustment date: 10/03/2006 SDIRETA1
04/07/2006 BHABTEW 00000010 071337 10752099
01 FC:1202 346.00 CR -86.00 OP

10/03/2006 SDIRETA1 00000005 071337 10752099
01 FC:1202 22.00 DA

10/03/2006 SDIRETA1 00000006 071337 10752099
01 FC:1201 86.00 OP
02 FC:1202 108.00 OP

Jane

United States Patent and Trademark Office

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[redacted]							$7,957.50	1689
[redacted]							$7,611.50	— Excess cls.
04/07	41	10747208	4504-096	1501	kmb	$1,400.00	$6,211.50	1690
04/07	42	10747208	4504-096	1504	kmb	$300.00	$5,911.50	
[redacted]							$5,411.50	1691 — Appeal Brf. fee
Hitrk 04/21	1	10992784	4824-031	1202-CT		$150.00	$5,261.50	1699
[redacted]							$5,081.50	1700 — IDS fee
04/24	24	10805399	5002-002	1806	kmb	$180.00	$4,901.50	1702
04/25	6	60793660	5000-058PRO	1005	kmb	$200.00	$4,701.50	1703
04/26	12	11337152	OLI-006	8021	kmb	$40.00	$4,661.50	1704
04/27	559	10543342	4752-008	1617	kmb	$130.00	$4,531.50	1705
04/27	560	10543342	4752-008	8021	kmb	$40.00	$4,491.50	

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Docket No.: 713-1000 PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of	)	
	)	
Marco SANWALD	)	Confirmation No.2313
	)	
U.S. Patent Application No. 10/752,099	)	Group Art Unit: 1734
	)	
Filed: January 7, 2004	)	

For: PUMPING DEVICE FOR POWDER, A METHOD THEREFORE AND A POWDER COATING DEVICE

RESPONSE TO NOTICE TO FILE MISSING PARTS

Commissioner of Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This is in response to the Notice of Missing Parts of Application dated April 12, 2004, the period for response to which is set to expire on June 12, 2004. Submitted herewith are the following:

- Declaration and Power of Attorney
- Statutory Basic Filing Fee ($770.00)
- Late Declaration Surcharge ($130.00)
- Additional Claim Fee ($194.00)
  - $108.00 for 6 Total Claims over 20
  - $86.00 for 1 Independent Claim over 3
- Copy of Notice to File Missing Parts
- Copy of a Preliminary Amendment filed January 7, 2004

Docket No.: 713-1000 PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of :

Marco SANWALD :

U.S. Patent Application No.: *pending* :

Filed: *herewith* :

For: PUMPING DEVICE FOR POWDER, A METHOD THEREFORE AND A POWDER COATING DEVICE

PRELIMINARY AMENDMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Preliminary to examination of the above-referenced application, please amend the application as follows:

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Original) A pumping system for powder (54), in particular for coating powders, containing at least one powder pump (2-1, 2-2) fitted with a metering chamber (4-1, 4-2) which is bounded by a chamber housing (6-1, 6-2) and an expelling element (8-1, 8-2), said expelling element which is forward-displaceable relative to the chamber housing during a pressure stroke and backward during a suction stroke, the pump chamber comprising a powder intake duct (36-1, 36-2) associated with a powder intake valve (38-1, 38-2), further a powder outlet duct (40-1, 40-2) associated with a powder outlet valve (42-1 , 42-2), and a compressed gas intake duct (44-1,44-2) associated with a compressed gas intake valve (46-1, 46-2), the powder intake valve (38-1, 38-2) being opened to aspirate a metered quantity of powder (54) into the metering chamber (4-1, 4-2) and the powder outlet valve (42-1, 42-2) and the compressed gas intake valve (46-1, 46-2) being closed, whereby the expelling element moving in the direction of the suction stroke is able to aspirate powder (54) through the powder intake duct (36-1, 36-2) into the metering chamber (4-1, 4-2), and the powder intake valve (38-1, 38-2) being closed in order to convey the metered quantity of powder out of the metering chamber (4-1, 4-2), and the powder outlet valve (42-1, 42-2) and the compressed gas intake duct (44-1, 44-2) are opened, as a result of which compressed gas flowing from the compressed gas intake duct (44-1, 44-2) is able to force the metered quantity of powder from the metering chamber (4-1, 4-2) into the powder outlet duct (40-1, 40-2), and a pump control unit (68) to drive the compressed gas intake valve (46-1, 46-2),

characterized in that

the pump control unit (68) comprises a time controller (74) by means of which the conveyance of powder out of the metering chamber (4-1, 4-2) is initiated as a function of the predetermined delay time elapsed since a predetermined operational point, the compressed gas being introduced at the end of the time delay into the metering chamber (4-1, 4-2) and the quantity of powder metered until the end of the time delay is forced by the compressed gas out of the metering chamber (4-1, 4-2).

2. (Original) Pump system as claimed in claim 1, characterized in that the pump control unit (68) comprises a timer and transmits each time, upon the lapse of a predetermined cycle time, control signals to a reversal device (34) to reverse the motion of the expelling element (8-1, 8-2) from suction stroke to pressure stroke and vice-versa from pressure stroke to suction stroke at the predetermined cycle time, and in that the pump control unit (68) is designed to initiate at the time controller (74) the predetermined delay time each time as a function of the time that control signal was generated which initiates the beginning of the suction stroke, the compressed gas being introduced at the end of said time delay into the metering chamber (4-1, 4-2) And the quantity of powder that was metered until the end of the delay time being forced out of the metering chamber (4-1, 4-2) by the compressed gas.

3. (Currently Amended) Pump system as claimed in claim 1~~either of claims 1 and 2~~, characterized by at least one monitoring sensor (S5, S6) detecting when the expelling element (8-1, 8-2) is at a predetermined position and generating a signal upon detecting that the expelling element is in the predetermined position, by the pump control unit (68)

being operationally connected to the minimum of one monitoring sensor, and by the pump control unit (68) being designed to automatically compare the time of the sensor signal with the time of at least one of the monitoring control signals to deduce whether the time interval between said two times deviates from a predetermined value, and by generating an error signal when a predetermined deviation from the predetermined values does arise.

4. (Currently Amended) Pump system as claimed in claim 1~~either of claims 1 and 2,~~ characterized in that there are at least two monitoring sensors (S5, S6) which are connected to the pump control unit (68) to detect when the expelling element (8-1, 8-2) is situated in one of two different predetermined positions and to generate sensor signals when detecting the expelling element in the predetermined positions, and in that the pump control unit (68) is designed to compare the time difference between the signals from one of the monitoring sensor and the signals from the other monitoring sensor on one hand and a predetermined time interval on the other hand, and to generate an error signal when the time difference deviates from the predetermined time interval by more than a predetermined value.

5. (Original) Pump system defined in claim 1, characterized in that the pump control unit (68) comprises a time controller (74) to initiate powder conveyance -- as a function of the predetermined delay time elapsed after a predetermined suction stroke position of the expelling element (8-1, 8-2) -- out of the metering chamber, compressed gas being introduced at the end of the time delay into the metering chamber (4-1, 4-2) and the

quantity of powder metered until the end of the delay time being forced by the compressed gas out of the metering chamber (4-1, 4-2).

6. (Original) Pump system as claimed in claim 5, characterized in that the predetermined suction stroke position is a suction stroke initial position.

7. (Original) Pump system as claimed in claim 5, characterized in that the predetermined suction stroke position is situated between a suction stroke initial position and a suction stroke final position.

8. (Original) Pump system as claimed in claim 5, characterized in that the predetermined suction stroke position is situated between a suction stroke position and a suction stroke final position, nearer the former than the latter.

9. (Currently Amended) Pump system as claimed in claim 5~~at least one of the above claims 5 through 8~~, characterized in that the time controller (74) comprises at least one sensor (S1, S4; S2, S3) to generate a signal when the expelling element (8-1, 8-2) is situated in a predetermined suction stroke position.

10. (Currently Amended) Pump system as claimed in claim 5~~one of claims 5 through 9~~, characterized in that it comprises a pump control unit (68) implementing the reversal of motions of the expelling element (8-1, 8-2) from suction stroke to pressure stroke and vice versa as a function of signals from sensors (S1, S4) each of which generates a signal

when the expelling element (8-1, 8-2) is situated along the stroke excursion at either of two predetermined motion reversal positions.

11. (Currently Amended) Pump system as claimed in claim 1~~at least one of the above claims~~, characterized in that the excursion of the expelling element (8-1, 8-2) is constantly the same size for all stroke displacements.

12. (Currently Amended) Pump system as claimed in claim 1~~at least one of the above claims~~, characterized in that a second time delay takes place at least at one of the motion reversal dead points of the expelling element (8-1, 8-2) before the expelling element (8-1, 8-2) having moved in one direction is moved in the pertinent other direction.

13. (Currently Amended) Pump system as claimed in claim 1~~at least one of the above claims~~, characterized in that the time delay is variably adjustable.

14. (Currently Amended) Pump system as claimed in claim 1~~at least one of the above claims~~, characterized in that the expelling element (8-1, 8-2) is a flexible membrane.

15. (Currently Amended) Pump system as claimed in claim 1~~at least one of the above claims~~, characterized in that the powder intake valve (38-1, 38-2) and the powder outlet valve (42-1, 42-2) are automatic valves which are automatically opened resp. closed by the pressure differential across their two valve sides.

16. (Original) Pump system as claimed in claim 15, characterized in that the powder intake valve (38-1, 38-2) and the powder outlet valve (42-1, 42-2) are automatic valves actuated in the manner of a check valve by differential gas pressure across their valve element (38-3, 42-3), said valve element (38-3, 42-3) being displaceable as a function of this gas pressure differential relative to a valve seat (38-4, 42-4) into its open or into its closed position and can be latched into said particular position.

17. (Original) Pump system as claimed in claim 15, characterized in that the powder intake valve (38-1, 38-2) and the powder outlet valve (42-1, 42-2) are automatic valves of the duck bill kind of which the duck bill automatically opens resp. closes on account of the pressure difference between the inside and the outside of the duck bill.

18. (Currently Amended) Pump system as claimed in claim 1~~at least one of the above claims~~, characterized in that at least two of the said powder pumps (2-1, 2-2) are used, their powder intake ducts (36-1, 36-2) being connected or connectable to a powder source and their powder outlet ducts (40-1, 40-2) being connected or connectable to a common powder feed aperture (48), and in that the two powder pumps (2-1, 2-2) are operated in opposition whereby a metered quantity of powder may be expelled in alternating manner from the metering chamber (4-1) of one powder pump (2-1) or from the metering chamber (4-2) of the other powder pump (2-2), by means of the compressed gas into the powder outlet duct (40-1, 40-2), and reversely powder may be alternatingly aspirated through the powder intake ducts (36-1, 36-2) into either of the other metering chamber (4-1, 4-2)

19. (Original) Pump system as claimed in claim 18, characterized in that the expelling element (8-1, 8-2) of the pumps are actuated by a common drive (10).

20. (Original) Powder coating apparatus characterized by a pump system as claimed in at least one of the above claims to convey coating powder.

21. (Original) Method for conveying powder (54), in particular coating powder, wherein powder (54) is aspirated by increasing the volume of a metering chamber (4-1, 4-2) from a power source into this metering chamber (4-1, 4-2) and thereupon the metered quantity of powder is forced by means of compressed gas out of the metering chamber (4-1, 4-2), thereupon the volume of the metering chamber (4-1, 4-2) being decreased and next the cycle being periodically repeated,

characterized in that

a predetermined phase of the periodic change in volume of the metering chamber (4-1, 4-2) is detected by sensors (S1, S4; S2, S3) and in that employing a predetermined time delay after the predetermined phase has been reached, the quantity of powder metered up to that time is forced out of the metering chamber (4-1, 4-2) by means of the compressed gas.

22. (Original) Method as claimed in claim 21, characterized in that at least one valve is used in the particular path in a powder intake duct (36-1, 36-2) into the metering chamber and in a powder outlet duct (40-1, 40-2) out of the metering chamber (4-1, 4-2), said

REMARKS:

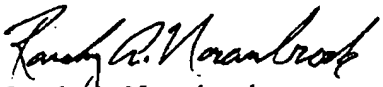
The above-referenced application is amended to remove the multiple dependencies of claims 3, 4, 9 to 15, 18 and 26.

Entry is in order.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 07-1337 and please credit any excess fees to such deposit account.

Respectfully submitted,

LOWE HAUPTMAN GILMAN & BERNER, LLP



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